What Is Claimed Is:

1. A method for reducing sensed physical variables including the steps of:

a) generating a plurality of control commands as a function of the sensed physical variables;

b) generating an estimate of a relationship between the sensed physical variables and the control commands, wherein the estimate is used in said step a) in generating the plurality of control commands;

c) updating the estimate of the relationship in said step b) based upon a response by the sensed physical variables to the control commands, wherein the control command in said step a) includes a normalization factor on the convergence rate that depends on said estimate in step b), and wherein said normalization factor is updated based on the update to the estimate.

2. The method according to Claim 1 wherein iterations of said step a) are performed at a control rate, and wherein said step c) further includes the steps of:

d) determining a Cholesky decomposition; and

e) reducing the computations per iteration of said step a) by splitting the Cholesky decomposition over more than one of said iterations.

3. The method according to Claim 2, further including the steps of:

f) generating a matrix of sensed physical variable data (z_k); and

g) generating a matrix of control command data (u_k), wherein $\Delta z_k = T \Delta u_k$, and where T is a matrix representing said estimate.

4. The method according to Claim 3, further including the step of:

h) updating the T matrix according to $T_{k+1} = T_k + EK^H$

where K is a gain matrix and E is residual vector formed as $E = y - Tv$, and where $y_k = \Delta z_k$, and $v_k = \Delta u_k$.

5. The method according to Claim 1, wherein iterations of said step a) are performed at a control rate, and wherein said step c) further includes the step of updating a normalization factor on a convergence rate of the function in said step a).

6. A method for reducing sensed physical variables including the steps of:

a) generating a plurality of control commands as a function of the sensed physical variables based upon an estimate of a relationship between the sensed physical variables and the control commands; and

b) updating the estimate of the relationship in said step a) based upon a response by the sensed physical variables to the control commands by treating the updating of the estimate as a portion of a QR decomposition and solving the QR decomposition.

7. The method according to Claim 6, wherein said steps a) and b) include adaptive quasi-steady control logic as a function of $\Delta u_n = -(T_n * T_n + W)^{-1} * T^T{}_n * y_n$.

8. The method according to Claim 7 further comprising:

reformulating the adaptive quasi-steady control logic into the QR decomposition.

9. The method according to Claim 8, wherein the adaptive quasi-steady control logic uses a square root algorithm in which theoretically negative feedback gains are computed as negative feedback gains.

10. The method according to Claim 9, further comprising:

propagating an estimate of a physical variable Y_n as a function of $Y_n=(W+T_n{}^T T_n)^{-1}$.